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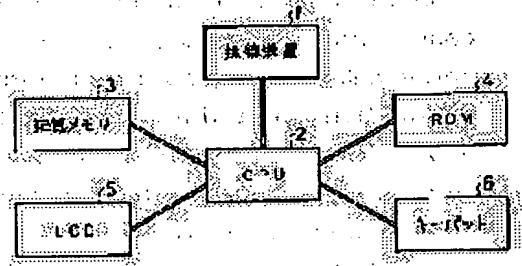
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(54) TELEPHONE SET WITH LOCATION DISPLAY FUNCTION

(57)Abstract:

PURPOSE: To allow a user to immediately recognize a current location in the telephone set connected to a nearby base station in a radio wave and in operation.

CONSTITUTION: A storage memory 3 stores information of location where a base station is installed corresponding to an area information number specific to each base station broadcast periodically from each base station. Upon the receipt of the area information number from a nearby base station through a radio equipment 1, a CPU 2 acquires the location information corresponding to the received area information number from the storage memory 3 and displays the information on an LCD 5.



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CLAIMS

[Claim(s)]

[Claim 1] In the telephone equipment used connecting by a nearby base station and wireless A storage means to memorize address information from each base station corresponding to the local information number of each base station proper broadcast periodically, Telephone equipment with an address display function characterized by having an address information acquisition means to acquire the address information corresponding to the local information number received from the nearby base station from said storage means, and a display-control means to display the address information acquired with this address information acquisition means on a display device.

[Claim 2] In the telephone equipment used connecting by a nearby base station and wireless A storage means to have a memorandum information storage field while memorizing address information from each base station corresponding to the local information number of each base station proper broadcast periodically, The memorandum information storage control means which memorizes the memorandum information inputted from the input device to the memorandum information storage field of said storage means corresponding to the local information number received from the nearby base station, An address information acquisition means to acquire the address information corresponding to the local information number which answered the address display demand from the input device, and was received from the nearby base station from said storage means, A memorandum information acquisition means to acquire the address information on the local information number corresponding to the memorandum information storage field to which the memorandum information which answered the memorandum information display request from the input device, and was memorized by said storage means, and this memorandum information were memorized, Telephone equipment with an address display function characterized by having a display-control means to display the information acquired with this memorandum information acquisition means and said address information acquisition means on a display device.

[Claim 3] In the telephone equipment used connecting by a nearby base station and wireless A storage means to have a memorandum information storage field while memorizing address information from each base station corresponding to the local information number of each base station proper broadcast periodically, The memorandum information storage control means which adds and memorizes current time to the memorandum information storage field of said storage means corresponding to the local information number which received the memorandum information inputted from the input device from the nearby base station, An address information acquisition means to acquire the address information corresponding to the local information number which answered the address display demand from the input device, and was received from the nearby base station from said storage means, A memorandum information acquisition means to acquire the address information on the local information number corresponding to the memorandum information storage field to which the memorandum information or memorandum information which answered the memorandum information display request from the input device, and was memorized by said storage means, and this memorandum information were memorized, Telephone equipment with an address display function characterized by having a display-control means to display the information acquired with this memorandum information acquisition means and said address information acquisition means on a display device.

[Translation done.] Now the B operator is not in the \mathcal{L} domain, so we cannot use the \mathcal{L} operator to move the \mathcal{B} operator. Instead, we can use the \mathcal{B} operator to move the \mathcal{L} operator. This is because the \mathcal{B} operator is a linear operator, and it commutes with the \mathcal{L} operator. So we can move the \mathcal{B} operator to the left of the \mathcal{L} operator, and then use the \mathcal{L} operator to move the \mathcal{B} operator to the right of the \mathcal{L} operator. This will give us the desired result.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001] **Technical Field** The present invention relates to a method and apparatus for generating a sequence of symbols.

[Industrial Application] Especially this invention relates to telephone equipment with an address display function about the telephone equipment of a migration communication mode.

[Description of the Prior Art] Establish a base station in every place of a message service field, and the telephone equipment carried in the automobile which moves in the inside of a service field or the telephone equipment of a pocket mold, and a nearby base station are connected on radio. The local information number which is a number of the proper for identifying a base station as a telephone system of the migration communication mode which offers a call service is assigned to each base station. The local information number of a local station is periodically broadcast from each base station, and the system which displayed the local information number on the display device is reported by the telephone equipment which received the local information number from the nearby base station.

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[Problem(s) to be Solved by the Invention] In such a system, since the local information number of a nearby base station is displayed on the display device of telephone equipment, the user of telephone equipment becomes possible [getting to know a current address to reliance] about the displayed local information number.

[0004] However, although it is convenient for the person expert in whether an every place region

Local information number is a number corresponding to which base station, and it is the base station where the base station was installed in what address since a local information number is only a number for only identifying each base station, those who do not know those relation are not easy for recognizing a concrete address immediately from the displayed local information number.

[0005] In view of such a situation, it succeeds in this invention, and the purpose is in offering the telephone equipment with an address display function with which a user can recognize a current address easily.

cash.
[0006]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the telephone equipment with an address display function of this invention In the telephone equipment used connecting by a nearby base station and wireless A storage means to memorize address information from each base station corresponding to the local information number of each base station proper broadcast periodically, He is trying to have an address information acquisition means to acquire the address information corresponding to the local information number received from the nearby base station from said storage means, and a display-control means to display the address information acquired with this address information acquisition means on a display device.

[0007] Moreover, in order to also enable it to record an easy memorandum on telephone equipment in each address A storage means to have a memorandum information storage field while memorizing address information from each base station corresponding to the local information number of each base station proper broadcast periodically, The memorandum information storage control means which memorizes what added current time to the memorandum information or it which was inputted from the input device to the memorandum information storage field of said storage means corresponding to the local information number received from the nearby base station, He is trying to have a memorandum information acquisition means to acquire the memorandum information or memorandum information which answered the memorandum information display request from the input device, and was memorized by said storage means, and address information, and a display-control means to display the information acquired with this memorandum information acquisition means on a display device.

[0008]

[Function] In the telephone equipment with an address display function of this invention A storage means corresponds to the local information number of each base station proper periodically broadcast from each base station. The address information which shows the address in which the base station where the local information number was assigned was installed is held. An address information acquisition means acquires the address information corresponding to the local information number received from the nearby base station from a storage means, and a display-control means displays this acquired address information on a display device.

[0009] Moreover, a storage means has a memorandum information storage field corresponding to an every place region information number. That by which the memorandum information storage control means added current time to the memorandum information or it which was inputted from the input device If it memorizes to the memorandum information storage field of the storage means corresponding to the local information number received from the nearby base station and a memorandum information display request is given from an input device A memorandum information acquisition means acquires the information memorized by the storage means, and a display-control means displays memorandum information, address information, the information on the time of day whose note was made, etc. on a display device based on this acquired information.

[0010]

[Example] Next, the example of this invention is explained to a detail with reference to a drawing.

[0011] When drawing 1 is referred to, one example of the telephone equipment with an address display function of this invention The radio equipment 1 which delivers and receives a signal by wireless between nearby base stations, CPU2 which manages control of the whole telephone equipment, and the storage memory 3, such as RAM in which write-in read-out is possible, It has ROM4 which memorizes the program which CPU2 performs, LCD5 which is a display device, and the key putt 6 equipped with function keys, such as a numerical keypad of 0-9, #, and *. In addition, the headset etc. has omitted illustration.

[0012] Drawing 2 shows the logical configuration of the information table 31 stored in the storage memory 3. This information table 31 is equipped with the entries E1-En for the number of a base station, and each entries E1-En consist of local information number area e1, address information area e2, and memorandum information area e3. The name (area name) of the address of the base station is beforehand stored in the address information area e2 where the local information number of each base station corresponds to the every place region information number area e1, respectively. The memorandum information area e3 is area which stores the memorandum information which the user inputted. In addition, you may make it make the address information area e2 memorize other information, such as guidance information about the area, in addition to an area name.

[0013] Drawing 3 is the explanatory view of the mode setting data stored in the storage memory 3, and the mode setting data for an address display in RM and MM are mode setting data for memorandum information displays. Modification by the user is attained so that the value of these mode setting data

RM and MM may be mentioned later.

[0014] When the mode setting data RM for an address display are "1", only address information is displayed on LCD5, when it is "2", address information and a local information number are displayed, and when it is "3", only a local information number is displayed.

[0015] When the mode setting data MM for memorandum information displays are "1", only memorandum information is displayed on LCD5, and when it is "2", memorandum information and address information are displayed.

[0016] Hereafter, actuation of the telephone equipment with an address display function of this example is explained.

[0017] If a user does the depression of for example, the # key of the key putt 6, and the key of 1 of a figure to coincidence, CPU2 will start address display processing as judged that the display of an address was required, for example, shown in drawing 4.

[0018] First, the local information number under reception is recognized from a nearby base station (S1). Become a phase hand at the time of telephone equipment carrying out call origination to a nearby base station here. When the local information number which received field strength is the thing of the strongest base station, and is periodically broadcast from the base station is received through radio equipment 1, CPU2 is memorized in the storage memory 3 by making this received local information number into a local region information number, and when the display of an address is required, that memorized local region information number is recognized at step S1.

[0019] Next, the information table 31 shown in drawing 2 in the storage memory 3 is searched, and the entry which has a local information number under reception in the local information number area e1 is acquired from a nearby base station (S2).

[0020] Next, the value of the mode setting data RM for an address display shown in drawing 3 in the storage memory 3 is judged (S3). The address information on the address information area e2 in the entry which carried out [above-mentioned] acquisition as an indicative data is set at the time of RM= "1". (S4), The address information and the local information number of the address information area e2 in the entry which carried out [above-mentioned] acquisition as an indicative data, and the local information number area e1 are set at the time of RM= "2" (S5). The local information number of the local information number area e1 in the entry which carried out [above-mentioned] acquisition is set at the time of RM= "3" (S6).

[0021] And the set indicative data is displayed on LCD5 (S7).

[0022] By this, RM= "1" or in the case of "2", a current address will be displayed on LCD5. In addition, in RM= "3", only a local information number is displayed as usual.

[0023] Next, when the above information is displayed on LCD5, a user starts the memorandum information registration processing which recorded a certain matter uniquely in connection with the address when the depression of the # key of the key putt 6 and the key of 2 of a figure is carried out for hurting at coincidence, as CPU2 judged that registration of memorandum information was required, for example, shown in drawing 5.

[0024] First, the figure inputted by the user from the key putt 6, the alpha character inputted in the combination of a function key and a numerical keypad are inputted as memorandum information (S11). In addition, CPU2 carries out the monitor display of the inputted memorandum information to LCD5 at this time.

[0025] If the input of memorandum information is completed, CPU2 will acquire the current time which an internal time-of-day timer shows (S12), and the current time acquired by S12 will be added to the memorandum information inputted by S11. It stores in the memorandum information area e3 of the corresponding entry in the information table 31 of drawing 2 of the storage memory 3, i.e., the memorandum information area of an entry which has a local information number under present reception in the local information number area e1, (S13). And memorandum information registration processing is ended.

[0026] A user can record [in / as mentioned above / each address] an easy memorandum on the storage memory 3 of telephone equipment.

[0027] Thus, at the time of next arbitration, it is made to display on LCD5 and the recorded memorandum information can be checked. Hereafter, the actuation at the time of the check of memorandum information is explained.

[0028] If a user does the depression of the # key of the key putt 6, and the key of 3 of a figure to coincidence, CPU2 will start memorandum information-display processing as judged that presenting of memorandum information was required, for example, shown in drawing 6.

[0029] First, the pointer N which directs the entry of the information table 31 in the storage memory 3 is set to 1 (S21), and the entry E1 of the beginning of the information table 31 is acquired according to the pointer N (S22).

[0030] Next, the value of the mode setting data MM for memorandum information displays shown in drawing 3 in the storage memory 3 is judged (S23). The memorandum information on the memorandum information area e3 of the entry E1 which carried out [above-mentioned] acquisition when becoming is set to an indicative data (S24). MM= "1" — MM= "2" — if it becomes, the memorandum information on the memorandum information area e3 of the entry E1 which carried out [above-mentioned] acquisition, and the address information on the address information area e2 will be set to an indicative data (S25).

[0031] And an indicative data is displayed on LCD5 (S26).

[0032] Thereby, in MM= "1", the memorandum information whose note was made when the memorandum information registered into the entry E1 of the information table 31, i.e., a user, was in the location corresponding to the local information number stored in the local information number area e1 of an entry E1 is displayed on LCD5 with the time information automatically added to it.

[0033] Moreover, in MM= "2", the address information stored in advance is also collectively displayed on the information table 31 in addition to the memorandum information accompanied by time information.

[0034] After the above-mentioned display, if a user does the depression for example, of the * key from the key putt 6, CPU2 judges that presenting of the memorandum information on the following entry was required (it is YES at S27), will carry out Pointer N +one, will set it to 2 (S28), and will display the 2nd entry, return and the information table 31, E1 on S22 like the 1st entry E1 via S29.

[0035] Thus, it indicates by sequential to the entry En of the last of the information entry 31, and if it is detected that the value of Pointer N exceeded the value Nmax corresponding to the last entry En by S29 (it is YES at S29), CPU2 will end display processing of memorandum information. Moreover, if a user does the depression for example, of the # key of the key putt 6 on the way, CPU2 will judge that termination of a memorandum information display was directed (it is YES at S30), and will end display processing of memorandum information at the time.

[0036] Next, the setting-operation of each mode setting data RM and MM shown in drawing 3 in the storage memory 3 is explained.

[0037] If a user does the depression of for example, the # key and the * key of the key putt 6 to coincidence, CPU2 will start the mode setting data setting processing which judges that a setup of mode setting data was required and is shown in drawing 7.

[0038] First, CPU2 receives the assignment of mode setting data made applicable to a setting (S31, S32). That is, when the key of 1 of the figure of the key putt 6 is pressed, it is judged as a setup of the mode setting data RM for an address display (it is YES at S31), and S33-S37 are performed. Moreover, when the key of 2 of a figure is pressed, it is judged as a setup of the mode setting data MM for memorandum information displays (it is YES at S32), and S38-S42 are performed.

[0039] In a setup of the mode setting data RM for an address display, first, RM= "1" is displayed on LCD5 (S33), and it waits for the input of the * key and the # key (S34, S35). And if the * key is inputted (it is YES at S34), only 1 will advance the value of RM (the degree of S37, however "3" is advanced to "1"), and if the # key is inputted (it is YES at S35), the mode setting data RM for an address display will be decided by setting the value of RM at the time as the storage memory 3 (S36).

[0040] In a setup of the mode setting data MM for memorandum information displays, first, MM= "1" is displayed on LCD5 (S38), and it waits for the input of the * key and the # key (S39, S40). And if the * key is inputted (it is YES at S39), only 1 will advance the value of MM (the degree of S42, however "2" is advanced to "1"), and if the # key is inputted (it is YES at S40), the mode setting data MM for memorandum information displays will be decided by setting the value of MM at the time as the storage memory 3 (S41).

[0041] A user can set the value of the mode setting data RM for an address display, and the mode setting data MM for memorandum information displays as arbitration as mentioned above.

[0042] Although the example of this invention was explained above, this invention is not limited only to the above example, in addition various kinds of addition modification is possible for it. For example, naturally it is also possible to constitute so that it may combine respectively with the demand of an address display and a memorandum information display whether you make which of a local information number and address information display in the case of the display of an address or address information is displayed in addition to memorandum information in the case of presenting of memorandum information and can specify.

[0043]

[Effect of the Invention] As explained above, the telephone equipment with an address display function of this invention can display the address in which it is now, the address information, i.e., the user, corresponding to the local information number received from the nearby base station. Therefore, a user has the advantage of being able to act in comfort also in an unfamiliar area.

[0044] Moreover, since the memorandum which could record the easy memorandum to record in the every place region on telephone equipment, and recorded it further or a memorandum, and address information and the time of day whose note was made can be displayed at the time of next arbitration, telephone equipment is effectively utilizable as a memo pad.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram of one example of the telephone equipment with address display capabilities of this invention.

[Drawing 2] It is drawing showing the logical configuration of the information table stored in storage memory.

[Drawing 3] It is the explanatory view of the mode setting data stored in storage memory.

[Drawing 4] It is the flow chart which shows an example of the display process of address information.

[Drawing 5] It is the flow chart which shows an example of registration processing of memorandum information.

[Drawing 6] It is the flow chart which shows an example of the display process of memorandum information.

[Drawing 7] It is the flow chart which shows an example of setting processing of mode setting data.

[Description of Notations]

1 — Radio equipment

2 — CPU

3 — Storage memory

4 — ROM

5 — LCD

6 — Key putt

31 — Information table

[Translation done.]